

WHAT IS CLAIMED IS:

1. In a communication system including one or more participating hosts
logically connected by at least one packet network link, the participating hosts
being associated with one or more reservation proxy elements, a method
5 comprising the reservation proxy elements performing steps of:
receiving a multicast group address to be used for a prospective
communication between the participating hosts;
joining the multicast group address;
exchanging one or more control messages across the packet network link,
10 thereby signaling one or more network devices to establish a reservation of
communication resources on the packet network link for the prospective
communication.
2. The method of claim 1, wherein the reservation proxy elements are
15 incorporated within one or more controllers of the communication system.
3. The method of claim 1, wherein the participating hosts are distributed
among a plurality of zones of the communication system, the at least one packet
network link comprising an inter-zone link.
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4. The method of claim 1, further comprising:
receiving, from the one or more network devices, confirmation of the
reservation; and
communicating, to a controller, indicia of availability of the
25 communication resources on the packet network link for the prospective
communication.
5. The method of claim 4, wherein upon the controller receiving indicia of
availability of the communication resources on the packet network link for the
30 prospective communication, the controller performs steps of:

granting the call request; and
instructing the participating hosts to join the multicast group address to participate in an active call.

5 6. The method of claim 1, wherein at least one of the one or more reservation messages includes the multicast group address for the prospective communication.

10 7. The method of claim 1, wherein the step of exchanging one or more control messages comprises:
 sending, from a sourcing reservation proxy element of the one or more reservation proxy elements, a first control message across the packet network link, the first control message being addressed to the multicast group address;
 receiving, by one or more receiving reservation proxy elements having
15 joined the multicast group address, the first control message; and
 sending, by the receiving reservation proxy elements responsive to the first control message, respective second control messages across the packet network link.

20 8. The method of claim 7, wherein the first control message comprises an RSVP path message and the second control messages comprise RSVP reserve messages.

25 9. The method of claim 8, wherein the RSVP path messages include a wildcard filter protocol, allowing for the reservation of communication resources on the packet network link to be used by an unspecified host of the participating hosts.

30 10. The method of claim 8, wherein the RSVP path messages include a shared explicit protocol, allowing for the reservation of communication resources

on the packet network link to be used by any one of a plurality of specified hosts of the participating hosts.

11. The method of claim 8, wherein the RSVP path messages include a fixed filter protocol, allowing for the reservation of communication resources on the packet network link to be used by each one of a plurality of specified hosts of the participating hosts.

12. In a communication system including one or more reservation proxy elements associated with a plurality of zones, a method comprising:

- receiving a call request for a talkgroup call;
- identifying a multicast group address for the call;
- determining locations of one or more participating devices for the call, thereby determining a number of participating zones of the plurality of zones, the reservation proxy elements associated with the participating zones defining participating reservation proxy elements;
- communicating the multicast group address to the participating reservation proxy elements; and
- receiving, from the participating reservation proxy elements, indicia of availability of communication resources on one or more links between the participating zones.

13. The method of claim 12, further comprising:

- granting the call request in response to a positive determination of availability; and
- instructing the participating devices to join the multicast group address.

14. The method of claim 12, further comprising busying the call request in response to a negative determination of availability.

15. The method of claim 12, performed by one or more controllers of the communication system.

16. The method of claim 15, wherein the one or more controllers
5 comprise communication resource controllers incorporating the one or more reservation proxy elements.

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